

REMARKS

Claims 7, 14, 21, 78, 146, and 148 have been amended by this Response. Claims 150-168 have been added by this Response. No new matter has been added by claims 150-168. Thus, Claims 7-29, 78-89, and 146-168 are pending in the present application.

Claim Objections

Claim 21 is objected to because of the alleged informality that, in line 2, the word “counties” appears to be “countries.” Applicants have amended claim 21 to correct this inadvertent typographical error.

Claim Rejections – 35 U.S.C. § 103

Claims 7-12, 14-29, 78-89, and 146-149 have been rejected under 34 U.S.C. § 103(a) as being unpatentable over McNerny (U.S. 5, 761,089) in view of Crane et al (U.S. 5,151,607) and further in view of Shigeno (U.S. 5,289,122).

An obviousness rejection under §103 requires that all the limitations of a claim must be taught or suggested by the prior art. M.P.E.P. § 2143.03 (citing *In re Royka*, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974)). A *prima facie* case of obviousness, *inter alia*, requires:

(i) a “suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings,” and

(ii) that “the prior art reference[s] . . . must teach or suggest all the claim limitations.” See M.P.E.P. § 2143 (citing *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991)).

Claims 7-12, 14-29, 78-89, and 146-149 recite using a plurality of “closely spaced magnetic sensors” for processing currency. Neither McNerny, Crane, Shigeno, or any combination thereof disclose such a feature. Thus, the combination of references proposed by the Examiner does not teach or suggest all of the claims limitations of claims 7-12, 14-29, 78-89, and 146-149, and as such, claims 7-12, 14-29, 78-89, and 146-149 are believed to be in condition for allowance.

According to the Examiner, McNerny allegedly discloses “a high-speed currency bill evaluation device (10) that receives a stack of bills in hopper/input receptacle (12), an output

receptacle (20 and 68) that receives bills after processing, a transport mechanism as shown in figure 2a, a magnetic scanhead (86), adjacent to a transport path, a cpu processor (302), rom and ram memories (318, 319), and optical sensors (80, 82, 84).” McInerny also allegedly discloses “comparing sampled data with stored master data, the cpu processor then determining based upon set threshold values whether the bill is authentic or not.” Allegedly, McInerny further discloses “handling multiple currencies from other countries as well as other documents such as food stamps, . . . that the scanhead is disposed transverse to the document transport path, . . . and that the bills are transported so that a long edge of the bill is the leading edge of the bill.”

The Examiner admits that McInerny does not expressly disclose that currency bills contain embedded magnetic security threads. The Examiner further admits that McInerny does not expressly disclose a magnetic scanhead that comprises several closely spaced magnetic sensors, as specifically claimed by the Applicants.

The Examiner, however, goes on to allege that Shigeno overcomes this deficiency in McInerny. The Examiner alleges that “Shigeno discloses a magnetic scanhead (10) that comprises several closely spaced magnetic sensors (12). The Examiner also alleges that “Shigeno also appears to disclose that the several magnetic sensors are about 5mm or less distance apart from each other. See figures 1-5 noting that the pitch Pa and Pb correspond to distances between magnetic sensors based upon the coarseness or fineness of the waveform being detected. See also col. 2, lines 6-21.” The Examiner has clearly misunderstood the teachings and functionality of Shigeno, which does not in any way teach a plurality of closely spaced magnetic sensors, as specifically claimed by the Applicants.

Shigeno discloses a magnetic sensor 10 having a four (or more) sensing parts 12 arranged in parallel thereon. *See* Shigeno, Col. 4, lls. 11-12, Col. 5, lls. 21-27. The two sensing parts 12 at both the ends are used for detecting a coarse magnetic pattern, and the two sensing parts 12 in the middle portion are used for detecting a fine magnetic pattern. *Id.*, Col. 4, lls. 20-23. Both the coarse and fine magnetic patterns printed on the bank bill 20 with the magnetic ink 18 can be detected. Shigeno is concerned with preventing the occurrence of time lag or shift between the coarse and fine signal waveforms which is due to the interval between the sensing part pairs. *Id.*, Col. 5, lls. 9-12. To prevent time lag or shift between the coarse and fine signals, a magnetic sensor is provided with multiple sensing parts and the central line of the sensing part pair

concerning the pitch P_A is made coincident with the central line of the sensing part pair concerning the pitch P_B .

As discussed above, Shigeno discloses a magnetic sensor 10 having four sensing parts 12. As illustrated in FIG. 1 of Shigeno, these four sensing parts 12 are spaced apart from one another in the direction of bill transport. Shigeno is concerned with determining the longitudinal differentiation with respect to a particular magnetic ink 18 patterns printed on the bank bill 20 within a uniform magnetic field (produced by the magnet 14). In Shigeno, the longitudinal differentiation determines the difference in the signal strength between the different sensing parts 12 within the magnetic sensor 10 as the magnetic features of the bank note 20 travel in the direction of the sensing parts 12. Shigeno utilizes four or more sensing parts 12 so as not to miss long scale details (i.e., the course signal waveforms) of the magnetic patterns, while also being able to read the shorter scale details (i.e., the fine signal waveforms) as the bank note 20 travels along the sensing parts 12.

Alternatively, Applicants' claims include the limitation that a plurality of closely spaced magnetic sensors is arranged generally perpendicular to the transport direction. The magnetic scanhead claimed by the Applicants is capable of scanning a substantially continuous segment of a currency bill transverse to the transport direction because the close proximity of the magnetic sensors effectively eliminates the dead spots from the magnetic scanhead. As such magnetic attributes having a small dimension, for example, according to some embodiments, a dimension smaller than 1 mm, can be scanned using the magnetic scanhead, regardless of the direction the bill is oriented along the transport path. In Shigeno, however, a small dimensioned magnetic attribute would have to be exactly aligned laterally with the magnetic sensing assembly to be detected as taught by Shigeno.

In addition, the Examiner alleges that, as shown in figures 1-5, the pitch P_A and P_B correspond to distances between magnetic sensors based upon the coarseness or fineness of the waveform being detected and that it therefore would have been obvious to vary this pitch value accordingly. Whether or not the Examiner's allegation is correct that it would have been obvious to vary the pitch value in Shigeno, it should be apparent that the pitch value of Shigeno is irrelevant to Applicants "closely spaced magnetic sensors." The pitch value of Shigeno is relevant only to the size (in the direction of the bill transport) of Shigeno's magnetic sensing assembly itself, as the pitch values are merely the distances between the individual sensing parts

12 of the magnetic sensing assembly. Thus, regardless of whether the pitch value of Shigeno can be adjusted, the spacing between magnetic sensing assemblies perpendicular to the direction of transport of the bill is unaffected. In fact, Shigeno does not even mention or illustrate the use of multiple magnetic sensing assemblies transverse to the direction of transport and, as such, cannot possibly disclose, teach, or suggest the use of a plurality of closely spaced magnetic sensors being generally perpendicular to the transport direction, as specifically claimed by the Applicants.

As the Examiner admits in the office action, McInerny does not overcome this deficiency because McInerny does not expressly disclose a magnetic scanhead that comprises several closely spaced magnetic sensors. Nor does the combination of Crane with McInerny and Shigeno render Applicants' claims obvious. Crane merely discloses a single-track scanhead and does not in any way teach an array of sensors and, as such, does not disclose, teach, or suggest Applicants' plurality of closely spaced magnetic sensors being arranged generally perpendicular to the transport direction.

Claim 13 has been rejected as being allegedly unpatentable over McInerny in view of Crane and further in view of Shigeno and still further in view of Winkler (U.S. 5,394,992). As discussed above, the combination of McInerny, Crane, and Shigeno does not disclose, teach, or suggest a plurality of closely spaced magnetic sensors being arranged generally perpendicular to the transport direction. Winkler does not overcome this deficiency in the prior art. In fact, Winkler does not even mention magnetic sensors within its disclosure. Thus, the Applicants respectfully submit that a *prima facie* case of obviousness has not been made, and that claims 7-29, 78-89, and 146-149 are patentable over McInerny in view of Crane and further in view of Shigeno and still further in view of Winkler under 35 U.S.C. § 103(a).

Claims 150-168 have been added by this Response. Each of claims 150-168 depend from claim 7, 14, 21, 78, 146, or 148 and, thus, contain the limitation that the magnetic scanhead contain a plurality of closely spaced magnetic sensors being arranged generally perpendicular to the transport direction. In addition, none of the cited references disclose the center to center distances of closely spaced magnetic sensors as being about five millimeters, nor the gap between each of the magnetic sensors as being about one-half millimeter. Claims 150-168 are supported by, at least, page 34, line 29 through page 35, line 4 of the Applicants' specification as

well as FIGS. 13-15 and 17a-19. Thus, claims 150-168 are also believe to be in condition for allowance for at least the above-discussed reasons.

Conclusion

In conclusion, the Applicants respectfully submit that all claims are in condition for allowance and such action is earnestly solicited.

If there are any matters which may be resolved or clarified through a telephone interview, the Examiner is respectfully requested to contact Applicants' undersigned attorney at the number indicated. Applicants believe that no fee is due with respect to this Amendment and Response (apart from the enclosed petition fee), however, should any additional fees be required (except for payment of the issue fee), the Commissioner is authorized to deduct the fees from Jenkins & Gilchrist, P.C. Deposit Account No. 10-0447, Order No. 47171-00271USP1. A duplicate copy of this Amendment and Response is enclosed for that purpose.

Respectfully submitted,



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